

Office Action Summary

Application No.

10/594,394

Applicant(s)

HARRIS ET AL.

Examiner

John J. Figueroa

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-49, 51-53, 56, 57, 60-64 and 71-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 40-49, 51-53, 56, 57, 60-64 and 71-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Proficiency's Patent Drawing Review (PTO-544)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/18/2010
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 20100828
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The obviousness-type double patenting rejection over copending U.S. Application No. 10/594,568 ('568 application) previously presented in item 4 on page 3 of the Office Action dated January 21, 2010 (hereinafter 'OA') has been withdrawn in view of Applicant's Terminal Disclaimer submitted with the response to OA filed June 18, 2010 (hereinafter 'Response').
2. The 35 U.S.C. §103(a) rejection of 40-49, 51-53, 56, 57, 60-64 and 71-74 as unpatentable over WO 2000/57022 A1 to Harris et al. (hereinafter 'Harris') in view of either USPN 7,265,079 B2 to Willberg et al. (hereinafter 'Willberg'079') or U.S. Patent Appl. Publ. No. 2004/0094300 A1 to Sullivan et al. (hereinafter 'Sullivan'), previously presented in item 6 on page 4 of OA, has been withdrawn in view of Applicant's amendment to independent claim 40 in Response.

Election/Restrictions

3. Applicant's election in the response dated October 30, 2009 to prosecute the claims of Group I (40-64 and 70-74) and the election of hydrolyzing enzyme as the species of polymer breaker to be examined had been acknowledged in item 1 on page 2 of OA.

4. Accordingly, claims 40-49, 51-53, 56, 57, 60-64 and 71-79 have been examined in the instant action. Claims 65-69 had been previously withdrawn from consideration as drawn to a non-elected invention whereas claims 54, 55, 58, 59 and 70 had been withdrawn as drawn to a non-elected species. However, Examiner notes that these non-elected claims have been cancelled by Applicant in Response.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 40-49, 56, 57, 61-64 and 71-79 are rejected under 35 U.S.C. 102(e) as being anticipated by Willberg'079.

Willberg'079 discloses an oilfield fluid composition for use in a method for drilling a subterranean formation, wherein the fluid composition provides self-destructive filter cakes and fluid-loss additives, and wherein the filter cakes are formed from a mixture of particulate solid acid-precursors, such as a polylactate or a polyglycolate ("polyesters"), and particulate solid acid-reactive materials, such as magnesium oxide or calcium carbonate (well-known "bridging agent"). (Abstract; col. 1, line 64 to col. 2, line 22) In

the presence of water, the solid acid-precursors hydrolyze, dissolve and generating acids that, in turn, dissolve the solid acid-reactive materials, wherein the solid acid-precursors can be in the form of particles; fibers; platelets; ribbons; or beads, or alternatively, can be coated or encapsulated (sustained-release). (Abstract; col. 2, lines 19-44; col. 3; line 5 to col. 4, line 61; col. 6, lines 51-67; Example 2 disclosing beads of about 9% by weight/volume polylactic acid in water)

Willberg'079 discloses that an advantage to using this mixture of fluid-loss additives and filter cakes is that the acid generated in the self-destruction process can function as a breaker for polymeric or viscoelastic surfactant viscosifying agents due to these acids known to damage/destroy synthetic polymers; biopolymers; and micelle/vesicle structures formed by viscoelastic surfactants used to viscosify drilling and completion fluids (prior to displacing the drilling fluid). (Col. 7, lines 1-10) In Example 3, Willberg'079 discloses forming a filter cake by using a sample of its fluid composition comprising polyglycolic acid; erucylamidopropyl betaine (well-known viscoelastic surfactant used to viscosify drilling/treatment fluids); and magnesium oxide or calcium carbonate. (Col. 8, lines 21-67; Table 2) This composition/mixture can be used in a diversion ("displacement") process that can contain additional fluid-loss additive and filter cake formers. (Col. 2, lines 23-44; col. 7, lines 11-33)

Thus, the instant claims are anticipated by Willberg'079.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 40-49, 51-53, 56, 57, 60-64 and 71-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willberg'079 in view of U.S. Patent Application Publication No. 2002/0076803 to Crews, hereinafter 'Crews'.

Willberg'079 was discussed above. Willberg'079 does not expressly teach the fluid composition containing hydrolase enzyme as a breaker.

However, Crews teaches oilfield fluids viscosified with a viscoelastic surfactant ("VES") that can have their viscosity reduced (i.e., gel broken) by the direct/indirect action of a bacteria, fungi and/or enzyme, wherein a bacteria can produce the enzyme *in situ* and can attack the VES itself to reduce its viscosity. (Abstract; page 2, [0013] to [0017]; [0024] to [0033]) The enzyme can be, for example, a lipase or a hydrolase, wherein nutrients can be added to enhance metabolic activity, such as a sulphite. (Page 4, [0045] to [0047]) The oilfield process using this fluid containing the bacteria/enzyme can be a drilling process or a diverting process. (Page 3, [0034])

Crews further teaches that the breaking mechanism of the biochemical agent (bacteria, enzyme and/or fungi) can be used to reduce the viscosity of the VES-gelled aqueous fluid regardless of whether the VES is ultimately used in a drilling, completion, diverting or clean-up process, particularly due to the enhanced mobility of bacteria as

contrasted to other VES clean-up fluids that must be transported by another means to the gel, such as mere chemical diffusion movement mechanisms of solvents. (Page 3, [0036]) Better clean-up of the VES fluid from a fracture or the wellbore can be achieved thereby enhancing the well's hydrocarbon productivity. (Page 3, [0037])

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to include a VES polymeric breaker, such as a bacteria and/or a hydrolase enzyme, in the VES fluid composition that forms the filter cake in the drilling process disclosed in Willberg'079 (e.g., Example 3). It would have been obvious to one skilled in the art to do so to attain a more efficient drilling operation having enhanced hydrocarbon productivity due to, *inter alia*, easy transport and clean-up in accordance with the teachings by Crews.

Thus, the present claims are unpatentable over Willberg'079 and Crews.

Response to Arguments

The Obviousness-Type Double Patenting Rejection (item 4 on page 3 of OA)

9. Applicant's arguments in Response regarding the captioned obviousness-type double patenting rejection have been considered but have become moot due to the withdrawal of this rejection in view of Applicant's filing of a Terminal Disclaimer with Response, which overcomes the instant double patenting rejection.

The 35 U.S.C. §103 Rejection over Harris, Willberg'079 and/or Sullivan (item 6 on page 4 of OA)

10. Applicant's arguments filed in Response traversing the captioned 35 U.S.C. 103 rejection as unpatentable over Harris in view of either Willberg'079 or Sullivan have been fully considered and deemed persuasive as regards as to Harris, the primary reference, not disclosing a viscosification agent in accordance with the present claims, as currently amended in Response. Thus, the present rejection over Harris and Willberg'079 or Sullivan has been withdrawn.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571)272-8916. The examiner can normally be reached on Monday-Thursday 8:00-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John J. Figueroa /
Examiner, Art Unit 1796

JJF/JJS